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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,472	12/08/2003	Akio Takada	450111-04871	2870

7590 10/21/2005

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EXAMINER

TAMAI, KARL I

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/730,472

Applicant(s)

TAKADA ET AL.

Examiner

Tamai I.E. Karl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9 and 15 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/31/2005
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I in the reply filed on 9/8/2005 is acknowledged. Applicant's argument regarding Group II is moot because the claims have been cancelled.

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Objections

4. Claim 6 is objected to because of the following informalities: claim 6 does not provide antecedent basis for "the substrate". Appropriate correction is required.

Specification

5. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification, such as: the brief description of the figures should refer only to figures 4(a) and 4(b), not figure 4 because there is no figure 4. The brief description of the figures should include a description of figure 14(a), 14(b), and 14(c) rather than figure 14. Appropriate correction is required.

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3, 5, and 6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kusagi (JP 06-021,532). Kusagi teaches MEMS device with a shaft 2 with a stator 4 attached to the shaft, a rotor 1 with an apertures through which the shaft

2 extends, and having a frustroconical air bearings (figure 4 on the surface of the stator) located on a wide portion of the shaft and within an annular opening(chamber) in the rotor substrate.

9. Claims 1, 3, and 15 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Chainer et al. (Chainer)(US 6430001). Chainer teaches MEMS motor for a HDD having a stationary shaft connected to the stator 20 via the substrate 30, where the shaft includes grooves 32b to create an air bearing.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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12. Claim 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusagi (JP 06-021,532) or Chainer et al. (Chainer)(US 6430001), in further view of Takahashi et al. (Takahashi)(US 5746515). Kusagi or Chainer each teach every aspect of the invention except the grooves on the stator rather than the rotor and the gap between the rotor and stator having at least three constrictions. Takahashi teaches that it is known to place dynamic pressure grooves on the rotor or the stator (see figures 7 and 10) with at least three constrictions. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Kusagi or Chainer with the grooves and constrictions on the rotor because Takahashi teaches the equivalence of the grooves on the rotor or stator and having three constrictions, and because it is within the ordinary skill in the art to choose between known equivalents, and because Chainer teaches the structure is a known or proven dynamic pressure bearing.

13. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kusagi (JP 06-021,532) in further view of Tokunaga (US 6674200). Kusagi teaches every aspect of the invention except the rotor having two substrates defining a chamber between them. Tokunaga teaches the rotor having two layers (substrates) to close off the bearing chamber and to maintain the rotor on the shaft (see figure 3). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Kusagi with the rotor including two substrates to form a chamber to close the bearing chamber and position the rotor in the motor, as shown by Tokunaga.

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14. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kusagi (JP 06-021,532) or Chainer et al. (Chainer)(US 6430001), in further view of Applicant's Admitted Prior Art (AAPA). Kusagi or Chainer each teach every aspect of the invention except the rotor having a recess with a yoke and magnetic material facing the stator with conductive loops. AAPA teaches a motor with rotor having a recess with a yoke and magnetic material facing the stator with conductive loops. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Kusagi or Chainer with a rotor having a recess with a yoke and magnetic material facing the stator with conductive loops to provide a motor in the micrometer size.

Allowable Subject Matter

15. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takada 2004/0119354, 2005/0036234, and 2005/0035671 show similar micromotors. Khan (US 5907456) teaches the counter plate 62 to provide axial stability and position the rotor hub in the motor.

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17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (571) 273 - 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karl I Tamai
PRIMARY PATENT EXAMINER
October 19, 2005

KARL TAMAI
PRIMARY EXAMINER

